



Docket No.: K0502.70037US00
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Basil Karanikos et al.
Serial No.: 10/658,925
Confirmation No.: 3129
Filed: September 10, 2003
For: BEVERAGE FILTER CARTRIDGE
Examiner: S. U. Kim
Art Unit: 1723

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Dated: 11-29-07 Signature: Lisa Robillard (Lisa A. Robillard)

DECLARATION UNDER RULE 132

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Commissioner for Patents
P.O. Box 1450
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1. I, Karl Winkler, have been asked by Keurig, Incorporated to objectively assess a rejection of patent claims made in the above-identified application.
2. For the past approximately 14 months, I have been the Vice President and General Manager, Engineering and Product Development for Kronos Incorporated, which has a place of business at 464 common St. Suite 301 Belmont, MA 98052. Prior to that, I served for 3 years as Vice President, Engineering for Armatron International, redesigning and launching lines of commercial and consumer products for Sam's Club, Costco, Flowtron, Outdoor Products and The Sharper Image. Prior to that, I worked as a senior product development engineer for Keurig, Incorporated, developing commercial and consumer single cup coffee brewing systems. Prior to that, I worked for The Schawbel Corporation, designing and developing products for such customers as Conair, for The Schawbel Corporation, designing and developing products for such customers as Conair,

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Black & Decker, Craftsman, S.C. Johnson, Philips, Scripto-Tokia and Sanyei/Koizumi. I have approximately 3 years of experience related to beverage cartridge brewing systems.

3. Regarding my formal educational background, I received a Bachelors of Science in Electrical Engineering from Northeastern University.

4. During my employment with Keurig, Incorporated from September 2000 to September 2003, I was active in designing, testing and otherwise developing two different single cup brewing systems that use a beverage filter cartridge like that described in the Sylvan patent cited below. My tenure with Keurig, Incorporated included time prior to, during and after development of the beverage filter cartridge including a fluted filter that is the subject of the above-identified patent application.

5. I have reviewed the Office Action dated August 10, 2007, references in the Office Action that are used to reject the claims (i.e., U.S. Patent 5,325,765 to Sylvan, U.S. Patent Publication 2002/0185010 to Spiteri, U.S. Patent 3,971,305 to Daswick, and U.S. Patent 3,389,650 to Michielsen), and the currently pending claims in this application. (I note that sections of the Office Action rejecting dependent claims refer to references "Lesser" and "Tanner" but the relevance of these references is not clear given that no rejection of claims is made in view of these references.)

6. I understand that independent claims 1, 12 and 44 in this application generally recite a beverage filter cartridge including:

a container having a bottom and sidewall extending upwardly from the bottom to a top opening;

a filter element having a bottom and a sidewall extending upwardly from the bottom, where the filter element is directly joined at a peripheral juncture to the container sidewall and the filter sidewall has pleats, flutes or corrugations; and

a cover that closes the top opening.

Claim 1 also requires that pleats or flutes in the filter element form exit channels between the filter sidewall and the cartridge sidewall that lead to a second chamber below the filter element. Claims

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12 and 44 also require that at least a portion of the filter sidewall is spaced inwardly from and out of contact with the container side wall. Claim 12 requires that the filter sidewall includes at least a portion that is permeable.

7. I understand that the Office Action rejects independent claims 1, 12 and 44 based on the purported obviousness of combining a pleated/fluted filter disclosed in Spiteri into the beverage cartridge of Sylvan. The examiner asserts that reasons for combining the fluted Spiteri filter in the Sylvan cartridge are:

“[i]t would have been obvious to one of ordinary skill in the art to have modified the coffee filter device of Sylvan by utilizing a pleated or fluted filter, as taught by Spiteri, in order to further augment the self-supporting aspect of the filter. It would have also been expedient to manufacture the filter element of Sylvan with the pleats/flutes of Spiteri to facilitate handling and packaging, cost-effective production, and provide stiffness so as to ensure sufficient rigidity to avoid collapse or sagging when wetted, as explained at paragraphs 6 and particularly 7 of Sylvan.” (Paragraph bridging pages 4 and 5 of the Office Action.)

8. With respect to the rejection of claims 1, 12 and 44, I disagree with the Examiner regarding the stated reasons why one of ordinary skill in the art would have modified the Sylvan cartridge to include a pleated filter as described in Spiteri. Although the examiner cites as a reason for the asserted obviousness a desire by one of skill in the art to augment the self-supporting aspect of the filter as taught in Sylvan, the self-supporting nature of the filter in Sylvan is very different from that of the self-supporting filter in Spiteri. That is, although Spiteri discloses that the pleated/fluted filter is self-supporting, the filter is self-supporting in a different sense and for different reasons in the Spiteri as compared to Sylvan. Sylvan discloses that the filter element should be self-supporting in the sense that it should not collapse against the container when attached to the container wall and wetted (col. 1, lines 50-53 of Sylvan). Also, the conical filter element of Sylvan is fixed to the container at its top end, and thus is supported by the container from its top so that the filter hangs inside the container. A conical filter element fixed within a container like that shown in Fig. 2 of Sylvan would be quite rigid in resisting high pressure introduced into the filter element by way of

the inlet needle 70 (see Fig. 4 and col. 4, lines 21-24 of Sylvan). That is, with the conical filter element fixed to the sidewall of the cartridge and pressurized hot water injected into the cartridge, the filter element would have little ability or tendency to deform and contact the container sidewalls because the filter paper of the filter element (not a highly stretchable material) and its configuration in the cartridge (a cone) will not allow substantial expansion or other deformation of the filter element.

In contrast, Spiteri teaches that the disclosed fluted filter element is self-supporting in the sense that the filter can rest on the bottom of a filter basket and the sidewalls can "stand" on their own within the basket. Paragraph [0005] of Spiteri. However, the Spiteri filter element remains flexible in other directions, including the ability of the filter element to expand and/or contract in radial directions, e.g., so that the filter element can conform to the filter basket walls. Paragraph [0009]. If the filter element were not flexible in this direction, the filter would not be capable of expanding from a folded configuration as shown in Fig. 1 to an unfolded configuration as shown in Fig. 4. Thus, although the Spiteri filter is relatively rigid in a vertical direction so the filter can support itself vertically in a brew basket, the Spiteri filter remains flexible in radial directions so the filter can be expanded from a folded configuration and the sidewalls can conform to the walls of the brew basket.

In view of the teachings of Spiteri, one of skill in the art would understand the "self-supporting" nature of the Spiteri filter as being very different from and in no way relevant to the "self-supporting" features required of a filter in a Sylvan cartridge. That is, one of skill in the art would understand the Spiteri filter as being capable of supporting itself vertically when resting on its bottom surface in a brew basket. Such vertical self-support of a filter to prevent the walls from collapsing under the force of gravity is not required in a Sylvan filter since the Sylvan filter is supported at its top edge by the container so the majority of the filter hangs from the top edge. In Sylvan, the filter needs to be self supporting in the sense that it will not expand, sag or otherwise move in sections below the secured top edge so as to contact the container. Nothing in Spiteri or Sylvan teaches that pleats or flutes in a filter would help prevent a filter in a Sylvan cartridge from contacting the container sidewalls when wetted and/or under pressure.

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Moreover, one of skill in the art would view the Spiteri filter as being flexible in radial directions and would understand that when pressure is applied at the interior of the Spiteri filter, the filter would expand radially. For example, if the Spiteri filter is placed in a brew basket and filled with coffee grounds, one of skill in the art would expect the filter element to expand into contact with the supporting brew basket. With this understanding, one of skill in the art would expect that if the filter element in Sylvan was highly flexible in radial directions, e.g., fluted like that in Spiteri, the filter element would tend to conform to and contact the cartridge container walls, especially when water under pressure is provided to the cartridge – a result that is explicitly taught to be avoided by Sylvan (see col. 3, lines 10-26). That is, one of skill in the art would have understood that introduction of pressurized water into a fluted filter in the Sylvan cartridge would cause the filter element to further expand (e.g., tending to stretch or flatten the sidewall flutes under the internal pressure) and contact the cartridge sidewalls. Thus, one of ordinary skill in the art would have understood that the use of a fluted filter element like that of Spiteri in the Sylvan cartridge would introduce a radially flexible and conformable filter element that can expand and conform to the cartridge walls upon the introduction of pressurized water into the cartridge. The radial flexibility and larger surface area of the fluted filter element would not allow it to resist deformation and potential contact with the container walls when under pressure during beverage creation. Since Sylvan expressly discloses that the filter element should not contact the container sidewalls during beverage formation, one of ordinary skill in the art would have considered a fluted filter like that in Spiteri to be unsuitable for use in a Sylvan cartridge.

The Office Action asserts additional reasons why one of skill in the art would incorporate a pleated or fluted filter in the Sylvan cartridge, including “[i]t would have also been expedient to manufacture the filter element of Sylvan with the pleats/flutes of Spiteri to facilitate handling and packaging, cost-effective production, and provide stiffness so as to ensure sufficient rigidity to avoid collapse or sagging when wetted, as explained at paragraphs 6 and particularly 7 of Sylvan.” As for being an expedient to manufacture, there is no teaching or suggestion in Sylvan or Spiteri that forming a Sylvan cartridge with a pleated or fluted filter would aid in manufacturing. In fact, the Spiteri filter includes several fold lines that must be made in a single sheet, which then must

have two separate ends crimped together. See Fig. 6 of Spiteri. In contrast, the Sylvan filter is made as a cone with no folds and a single weld seam. I do not understand how complicating the filter arrangement in a Sylvan cartridge would be an expedient to manufacturing; to the contrary, I believe adding pleats or folds like that taught in Spiteri would complicate the manufacturing process.

As for facilitating handling and packaging, and cost-effective production, I do not understand Sylvan or Spiteri as teaching that a fluted or pleated filter arrangement would facilitate handling or packaging, or would reduce production costs when making a Sylvan cartridge. As mentioned above, handling and manufacturing a fluted or pleated filter as taught in Spiteri would likely increase costs of manufacture, and I believe would also complicate the filter handling process. That is, a fluted or pleated filter like that in Spiteri would have to be expanded into place in a cartridge and held appropriately for joining to the interior of the container to make a Sylvan cartridge. On the other hand, a conical filter like that in Sylvan may be formed to have a circular shape at its top end that matches the size of the container, thereby easing the filter insertion and welding process. In my opinion, using a pleated or fluted filter like that of Spiteri in a Sylvan cartridge would actually complicate handling and packaging and would not be cheaper.

As for "provid[ing] stiffness so as to ensure sufficient rigidity to avoid collapse or sagging when wetted, as explained at paragraphs 6 and particularly 7 of Sylvan," Sylvan is not organized by paragraphs, and so I am unsure which section of Sylvan the examiner is identifying. If the examiner is referring to Spiteri (in which paragraphs 6 and 7 describe considerations regarding cost-effectiveness, packaging and filter stiffness), I believe that these teachings in Spiteri are not relevant to a Sylvan cartridge. Regarding cost-effectiveness, Spiteri merely states the obvious that cost-effectiveness must be considered, not that the described filter is any more cost-effective than any other filter arrangement. Regarding packaging, Spiteri mentions that the described filters can be folded flat so as to occupy a minimal area when packaged. A filter in Sylvan is not folded flat for packaging, and instead is in a fully expanded form in the container when shipped from the factory. One of skill in the art would not view a Sylvan filter's ability to be folded flat to be an advantage. As for stiffness to ensure rigidity, as mentioned above, the Spiteri filter needs vertical rigidity

because the filter is supported from the bottom and vertical rigidity helps ensure that the sidewalls do not fold inward when wetted. A filter in a Sylvan cartridge is supported from the top and hangs from the container sidewall. There is no risk of the top edge folding down under the pull of gravity when the filter is wetted. Instead, the filter needs sufficient rigidity in a radial direction to avoid contact with the container walls. Spiteri does not teach that the folds or pleats in the filter provide radial stiffness for a filter, and thus one of skill in the art would not understand the Spiteri filter as providing advantages for application in the Sylvan cartridge.

9. As I have stated in a prior Declaration, it is my opinion that teachings regarding a filter element for use in a drip-type coffee brewer, like that in Spiteri or previously applied Frise, are not necessarily suitable for use in forming a beverage cartridge having a filter element and that is used to form beverages using injected, pressurized water. The functioning of the filter element in a drip-type brewer is quite different from that in the Sylvan cartridge. The Spiteri filter element is supported from the bottom and sides, and most of the beverage flow occurs through the bottom of the filter element due to gravity. In contrast, the filter element in the Sylvan cartridge is subjected to pressure during beverage formation, and flow through the filter is the result of pressure driving the liquid through the filter in nearly all directions, not one direction due to gravity. This pressure places significantly more stress on the filter sidewall than that experienced during drip-type brewing, and requires the filter element to function in a different way. As a result, one of ordinary skill in the art would not necessarily have concluded that because a filter configuration (i.e., a fluted filter sidewalls) is suitable for use in drip-type brewing, that the same configuration would be suitable for use in pressurized cartridge-based beverage formation. This is especially true where the reason for the fluted sidewalls (conformance of the filter sidewalls to the filter support and/or vertical stiffness to avoid sidewall collapse) is either in direct contradiction to the teachings of Sylvan that the filter sidewall should avoid contact with the container sidewall or is irrelevant to the filter's function in a Sylvan cartridge.

In fact, the invention regarding use of a pleated, fluted or corrugated filter element as set forth in claims 1, 12 and 44 did not involve the known use of a prior art element to obtain predictable results. Although fluted sidewall filters were known for gravity-driven drip-type

brewing, pleated, fluted or corrugated filter elements were not used in pressurized cartridge-type beverage formation. Thus, one of ordinary skill in the art would not have been able to predict whether use of such a filter element in a beverage cartridge like Sylvan would have been successful since there was no established function of such filter elements for that application. To the contrary, the known function of a fluted filter element was that its sidewalls would conform to and contact the sidewalls of a supporting basket – in direct contrast to the desired function of a filter sidewall in a Sylvan cartridge. It is my opinion that nothing in Spiteri would have suggested to one of ordinary skill in the art that the disclosed fluted filter would be suitable for use in any application other than one in which the filter is supported on the bottom and sides, much less suitable for use in a Sylvan beverage cartridge.

11. In view of the above, it is my opinion that the rejection of independent claims 1, 12 and 44 in the Office Action is not sustainable, in part because it is based on inaccurate or unfounded reasons for combining features of the prior art. That is, the Office Action has not articulated at least one reason why one of ordinary skill in the art would have used a fluted filter like that in Spiteri in a Sylvan beverage cartridge. To the contrary, there are several reasons described above why one of ordinary skill in the art would not have used such a filter in the Sylvan cartridge.

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above application and any patent or application related thereto.



Name

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